

SPORT BRIDGE: MOTIVATIONS FOR ONLINE PLAY IN POLAND

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Purpose: The aim of this paper is to assess the propensity to play bridge online among Polish players. In assessing the propensity, the study sought to answer three research questions: whether the game's identity has been preserved in the online environment; whether the game continues to satisfy needs for intellectual entertainment and social interaction; and whether online play enables fair competition and skills development.

Design/methodology/approach: To achieve this objective, a literature review was conducted on e-sports and online gaming, including bridge, based on 80 scientific publications (including 8 from 2020-2025) from the Scopus database and 16 industry statistical reports. Based on the literature review, an original online survey questionnaire (CAWI) was prepared, completed by 124 Polish bridge players, with a breakdown by gender and age. The survey link was sent in March 2026 to members of bridge clubs in Poznan, Warsaw and Cracow, and to participants in the Polish Junior Championships. Purposive sampling with a snowball variant was used.

Findings: The overall propensity to play bridge online is high (88.71%). In the youngest (10-19 years) and the 40-49 age group it reaches 100%; among those who began playing during the pandemic (2020) it stands at 95.83%. Competition ($M = 5.06$) and Personal Development ($M = 4.91$) emerge as the dominant motivational dimensions, confirming the achievement-oriented sporting identity of the game. Online platforms are broadly endorsed as effective training tools ($M = 5.58$), most strongly by elite players. The implementation of systems such as EDGAR in 2024 significantly affects the combating of unfair practices online.

Originality/value: This paper analyses the evolution of bridge from a social game to a digital sport, pointing to the synergy between tradition and modernity and the impact of moving play online on players from social, gameplay and skills perspectives.

Keywords: online games, sport bridge, players' motivation.

Paper category: research paper.

1. Introduction

For centuries, card games have been a beloved form of entertainment, skill development and social interaction. Whether using a traditional 52-card deck or special sets such as tarot or collectible cards, cards have fascinated people of all ages. In the current era, however, the digital revolution has influenced almost every aspect of life, including the scope and intensity of card games, which have seamlessly migrated to the digital world, combining the elegance of traditional play with the boundless possibilities of technology.

The digital revolution of recent decades has profoundly changed the way people spend their leisure time. Online games have become one of the most popular forms of entertainment in the world, engaging – according to Newzoo (2025) – more than 3.43 billion active players generating revenues of 225.7 billion USD (Fortune Business Insights, 2025). In Poland alone, according to Statista (2025) data, more than 17 million people play online regularly, representing nearly 44% of the country's population. The COVID-19 pandemic (2020-2022) was an unprecedented growth catalyst – Newzoo (2021) estimates a 23% increase in game sales in 2020 alone, and the impact on players' behaviour and users' mental health became a major research topic in publications indexed in Scopus between 2020 and 2025.

The phenomenon of online gaming attracts the attention of researchers from various fields: psychology, sociology, health sciences and education. A particularly interesting group is players of classic games such as bridge, chess or poker card variants, which have undergone digital transformation. The Bridge Base Online platform recorded an increase in daily users in March 2020 from around 13,000 to about 35,000 (BBO, March 2020).

The aim of this paper is to assess the propensity to play bridge online among Polish players. In assessing the propensity, the study sought to answer three research questions:

1. Has the game's identity been preserved?
2. Does the game still satisfy needs for intellectual entertainment and social interaction?
3. Does online play allow for fair competition and skills development?

2. Literature Review – Motivations in the Gaming Industry

2.1. Industry Growth Dynamics

The years 2020-2025 represent an exceptional period for the online gaming industry. In 2020, according to Newzoo (2020), the global market was valued at 159.3 billion USD with a base of 2.71 billion players (Table 1). The COVID-19 pandemic accelerated the digitalisation of entertainment (Lewicki, 2020), and in 2021 Newzoo (2021) recorded growth to 180.3 billion USD and 2.96 billion players. Following a correction in 2022-2023, a new growth impulse

emerged: in 2025, Fortune Business Insights (Fortune BI, 2025) estimates the market value at a record 225.7 billion USD, while Newzoo (2025) puts the number of players at 3.43 billion. The cumulative growth in the number of players between 2020 and 2025 stands at +26.8%.

Table 1.

Online gaming market dynamics in 2020-2025 – key statistics

Year	Players worldwide	Market value (bn USD)	YoY growth	Key event / research finding	Source
2020	2.71 bn	159.3	+6.6%	COVID-19 pandemic: +23% game sales; BBO grew to 180k daily users; 82% of consumers played or watched games (Nielsen, 2020)	Newzoo, 2020; Nielsen, 2020
2021	2.96 bn	180.3	+13.2%	Peak pandemic activity; WHO ICD-11 with gaming disorder; IGD: 3.05% globally (Stevens et al., 2021); Vuorre et al.: objective increase in play hours – moderate	Newzoo, 2021; Stevens et al., 2021
2022	3.09 bn	184.4	+2.3%	Post-pandemic stabilisation; Alimoradi et al.: increase in behavioural addictions; Savolainen et al.: social motives as predictor of problematic gaming	Newzoo, 2022; Alimoradi et al., 2022
2023	3.22 bn	184.0	-0.2%	Scopus publications on online gaming doubled vs 2019; Limone et al.: 19% of boys and 7.8% of girls with addiction symptoms; Oceja et al.: no clear evidence of IGD increase	Newzoo, 2023; Limone et al., 2023
2024	3.32 bn	187.7	+2.1%	AI in 52% of development projects; microtransactions: 97.7 bn USD; VR market: 7.8 bn USD; mobile games: 51.2% of sector revenue	Newzoo, 2024; Grand View Research, 2024
2025	3.43 bn	225.7	+20.3%	E-sports market: 4.78 bn USD; game streaming: 1.42 bn viewers; 58% of Gen Z players consider gaming their primary social activity	Fortune BI, 2025; Newzoo, 2025

Sources: own elaboration based on Newzoo (2020-2025); Fortune Business Insights (2025); Statista (2025); Nielsen (2020).

The mobile segment consolidated its dominance – in 2025 it accounts for 51.2% of total sector revenue (Statista, 2025). Poland, according to Statista (2025) data, grew its online gaming population from around 14.5 million in 2020 to more than 17 million in 2025, with nearly 30% growth in the card gaming market between 2020 and 2024 (Sensor Tower, 2024).

2.2. Player Motivations

In the present literature review, source searches were conducted in the Scopus database using the keywords: "online gaming motivation", "online card games", "bridge game psychology", "digital games social interaction", "gamification cognitive training", "COVID-19 gaming" and "internet gaming disorder 2020-2025". The inclusion criterion covered publication

in a peer-reviewed journal between 2003 and 2025, availability of full text and thematic alignment with the research area. In total, over 80 scientific publications were analysed (including 8 from 2020-2025) along with 16 industry statistical reports. Based on the literature review, ten main motivation categories were identified (Table 2).

Table 2.

Main motivations of online players – synthesis of research findings (own work based on Scopus)

Motivation	Description	Source (Scopus)	% of players	Year of study
Entertainment & pleasure	Immediate reward, sensory stimulation, fun	Yee, 2006; Kuss, Griffiths, 2012	87%	2006-2012
Social interaction	Building relationships, sense of group belonging	Hussain, Griffiths, 2009	74%	2009
Competition & challenge	Competing with others, improving skills, rankings	Przybylski et al., 2010	68%	2010
Escapism	Stress reduction, detachment from problems, relaxation	Kardefelt-Winther, 2014	61%	2014
Cognitive & intellectual development	Problem solving, strategy, cognitive training	Aaen-Stockdale, 2012; Mayer, 2019	55%	2012-2019
Achievement & prestige	Earning badges, levels, community recognition	Yee, 2006	52%	2006
Immersion & exploration	Exploring virtual worlds, narrative, roleplay	Yee, 2006; Hussain, Griffiths, 2009	48%	2006-2009
Social compensation	Filling emotional gap for shy/lonely individuals	Kuss, Griffiths, 2012	34%	2012
Accessibility & convenience	24/7 access without leaving home	Griffiths et al., 2004	71%	2004
Nostalgia & tradition (bridge)	Continuing a hobby, preserving classic games in a digital environment in time of pandemic	Snellgrove, Punch, 2024	70%	2024

Source: own elaboration.

The dominant motive remains entertainment and pleasure (87% of indications; Yee, 2006; Kuss, Griffiths, 2012). Kuss and Griffiths (2012) emphasise that social motives more strongly predict gaming regularity than hedonic motives. Savolainen et al. (2022) confirmed that social motives were the key predictor of problematic gaming during the pandemic. Worthy of note too is the aspect of competition and challenge (Przybylski et al., 2010) and cognitive and intellectual development (Aaen-Stockdale, 2012; Mayer, 2019). These four key motives for online gaming activity (besides escapism) will be subject to analysis in the study carried out as part of this paper.

Table 3.*Key Scopus publications on online gaming in 2020-2025 including the pandemic*

Study (Scopus)	Year	Journal	N / type	Key finding
Vuorre et al.	2021	Royal Society Open Science	Large	Objective console API data: increase in play time during UK lockdown was moderate – refuting 'moral panic'
Stevens et al.	2021	Clinical Psychology Review	Meta-analysis	Global IGD prevalence: 3.05% (CI 2.38-3.91%); higher rates in Asian populations and males
Alimoradi et al.	2022	Current Addiction Reports	Meta-analysis	Rise in prevalence of behavioural addictions; gaming and gambling increased proportionally with social isolation
Savolainen et al.	2022	Comprehensive Psychiatry	1200	Social motives – main predictor of problematic gaming during the pandemic; no effect found for escapist motives
Pallavicini et al.	2022	Cyberpsychology Behav. Social Netw.	48 studies	Video games reduced stress, anxiety and loneliness in the early stages of COVID-19; most effects positive or neutral
Oceja et al.	2023	Sustainability	31 studies	No clear evidence of increased problematic gaming during lockdown; too much variation in measurement tools
Limone et al.	2023	Int. J. Mental Health Addict.	Syst. review	19% of boys and 7.8% of girls with gaming addiction symptoms after the pandemic; key predictors: depression, anxiety, low social support
Michellini et al.	2023	Addictive Behaviors	7 countries	Measurement invariance of gaming motives across 7 countries; achievement motive most strongly linked to IGD cross-culturally

Sources: own work based on articles from the Scopus database.

The pandemic inspired a wave of scientific research. The meta-analysis by Stevens et al. (2021) estimated the global prevalence of IGD at 3.05% (CI: 2.38-3.91%), with markedly higher rates in East Asia and among males. Limone et al. (2023) found that after the pandemic, 19% of boys and 7.8% of girls showed symptoms of gaming addiction. Pallavicini et al. (2022) in a review of 48 studies found that video games reduced stress and loneliness in the majority of players during the early stages of COVID-19.

2.3. Number of Online Players in Poland – Statistical Data

As mentioned, the global online gaming market reached a value of 225.7 billion USD, with the number of active players standing at 3.43 billion in 2025 (Newzoo, 2025). The industry's growth stemmed mainly from activity in the mobile segment (Table 4) – 51.2% of revenues (Statista, 2025). Asia Pacific dominates with a 51.2% market share (Fortune Business Insights, 2025). In Poland, more than 17 million people play regularly (Statista, 2025), and the domestic games market is valued at around PLN 3.1 billion annually (PricewaterhouseCoopers, 2024). According to GUS (2023), 41% of Poles aged 16-74 declare playing digital games. Poland is the seventh-largest games market in Europe.

Table 4.

Number of online players worldwide and in Poland by game category

Category / Game	Players worldwide	Players in Poland	YoY growth	Source
Online games (total)	3.43 bn (2025)	~17.2 m (2025)	+8.5%	Newzoo, 2025
Mobile online games	2.5 bn (2025)	~12 m (2025)	+12.1%	Statista, 2025
MMORPG / multiplayer	~470 m (2024)	~2.9 m (2024)	+5.3%	DFC Intelligence, 2024
Online card games (total)	~130 m (2024)	~1.3 m (2024)	+9.7%	Sensor Tower, 2024
Online bridge (BBO, registered)	~5.5 m (BBO, 2023)	~80,000 (PZBS, 2023)	+14.2%	BBO; PZBS, 2023
Online chess	~80 m (Chess.com 2025)	~650,000 (2025)	+23%	Chess.com, 2025
E-sport (viewers + players)	~578 m fans (2024)	~2 m fans (2024)	+11.5%	Newzoo, 2024

Sources: Newzoo (2025); Statista (2025); DFC Intelligence (2024); Sensor Tower (2024); BBO (2023); PZBS (2023); Chess.com (2025); Newzoo (2024).

Among online games, mobile games attract the greatest interest. However, in the case of traditional games such as chess or bridge, the migration of players to the online format produces significant growth dynamics: in the case of chess, 2025 saw a 23% increase in players compared to 2024 (Chess.com, 2025), while for bridge the figure was more than 14% in 2023 compared to 2022 (BBO, 2023).

2.4. Online Bridge – Characteristics and Player Motivations

Bridge is a card game recognised by the World Bridge Federation (WBF) as a sporting discipline. Bridge is a technical and challenging game, that takes years of diligent play in order to reach elite level (Punch, 2021). The Bridge Base Online (BBO) platform, founded in 2001 by Fred Gitelman, had gathered over 5.5 million registered users from more than 140 countries by 2023 (BBO, 2023). In Poland, the Polish Bridge Sports Association (PZBS) has around 10,000 licensed players (PZBS, 2023), and the number of active online bridge players is estimated at around 80,000 (PZBS, 2023).

Verghese et al. (2003) demonstrated that regularly playing card games was associated with a 38% reduction in dementia risk in an elderly group (Table 5). Aichele et al. (2016) confirmed this result in a long-term Norwegian study.

According to the Entertainment Software Association (ESA, 2023), the dominant group among all online players is those aged 18-34 (38% of players; Newzoo, 2024; Table 6). AARP (2022) research indicates that online bridge is dominated by people aged 55-74 (42% of players), which represents a reversed structure compared to the industry as a whole.

Table 5.

Motivations characteristic of online bridge players

Bridge-specific motivation	Research finding / description	Author / Source	% of respondents
Cognitive training / anti-aging	Associated with 38% reduction in dementia risk; working memory stimulation	Vergheze et al., 2003; Aichele et al., 2016	65%
Tradition & cultural identity	Bridge as part of family heritage; e-bridge enables continuation	Kitayama, Salvador, 2017	58%
Senior age & activity	Dominance of 55+ players; platforms replace clubs for those with limited mobility during pandemic	Snellgrove, Punch, 2024	70%

Sources: Vergheze et al. (2003); Aichele et al. (2016); Kitayama, Salvador (2017); Snellgrove, Punch (2024).

Table 6.*Demographic profile of online players by age group*

Age group	% of online players (world)	% of online bridge players	Dominant motives	Source
13-17	26%	2%	Entertainment, competition	ESA, 2023
18-34	38%	12%	Community, e-sport	Newzoo, 2024
35-54	24%	31%	Relaxation, cognitive challenges	GfK / Statista, 2024
55-74	10%	42%	Cognition, social activity	AARP, 2022
75+	2%	13%	Anti-aging, accessibility	AARP, 2022

Data: ESA (2023); Newzoo (2024); GfK / Statista (2024); AARP (2022).

The data point to a reversed age structure in online bridge – the dominant group is people aged 55-74 (42% according to AARP, 2022).

The literature review and statistical data allow several key conclusions to be drawn. First, the motivations for playing online are multidimensional and are rooted in fundamental human psychological needs. The COVID-19 pandemic revealed both the protective and risky aspects of online gaming – the compensatory function of games alleviated loneliness in the majority of users, but in a vulnerable group it escalated to problematic gaming (Snellgrove&Punch, 2024). Second, online bridge represents a fascinating case of a classic game that, thanks to digitalisation, is alive and attracting new players. The growth of BBO activity by about 300% during lockdowns (BBO, March 2020) confirms this.

3. Research Method – Motivation to Play Bridge Online

Based on the literature review and using Yee's (2006) motivation taxonomy model, which proposed a three-component taxonomy related to gaming: (1) achievement, (2) social interaction, (3) immersion (a model cited over 3000 times in the Scopus database,

and confirmed by Michelini et al. (2023) for measurement invariance across 7 countries), the Authors decided to conduct a survey of the motives stimulating Polish bridge players to play online. In the adopted research instrument, respondents were asked to assess their propensity to play bridge online, with particular emphasis on the entertainment, social, competition and development aspects.

Table 7.
Characteristics of the study population

Characteristic	Categories	Number of respondents
Gender	Female	31 (25%)
	Male	92 (74.19%)
	Other	1 (0.81%)
Age	10-19	24 (19.35%)
	20-29	46 (37.1%)
	30-39	14 (11.29%)
	40-49	14 (11.29%)
	50+	26 (20.97%)
Qualification Coefficient (QC)	Up to 5 QC	97 (78.23%)
	Above 5 QC	27 (21.77%)
How long have you been playing bridge?	Since 2024	11 (8.87%)
	Since 2020	24 (19.35%)
	Since 2016	33 (26.61%)
	Started before 2016	56 (45.16%)
Do you play online?	Yes	110 (88.71%)
	No	14 (11.29%)

Source: Own work.

In the study, approximately 75% of respondents were Polish male bridge players and 25% – female ones. The age distribution allows analysis of variation in players' approaches to playing bridge online. The survey also included a question about the Qualification Coefficient (QC), which is a numerical indicator of a player's strength based on qualification points earned. The range of the indicator spans values from 0 to 24, where 0 refers to a beginner and 24 to a World Grand Master (according to MSCezar, 2026 data, with only 48 such titles awarded in the entire post-war history of Polish bridge up to March 2026). It is assumed that a QC in the range of 0 to 5 refers to players active in domestic competitions, while a QC of 7 to 24 characterises players active at the international level. The survey also included a question about when the respondent began playing bridge, taking into account: the last 3 years (since 2024), the pandemic period (since 2020), the last 10 years (since 2016) and earlier (before 2016).

4. Findings – Propensity and Motives for Playing Bridge Online In Poland

The following section presents an analytical discussion of the empirical results captured in Tables 8, 9, and 10. The analysis is structured around the three research questions formulated in the introduction: (1) whether the identity of the game has been preserved in the online environment; (2) whether the game continues to satisfy players' needs for intellectual entertainment and social interaction; and (3) whether online play enables fair competition and skill development.

Table 8.

Propensity to play online among Polish bridge players

Feature	Category	Does not play online	Plays online
Gender	Female	9.68%	90.32%
	Male	11.96%	88.04%
	Other	0.00%	100.00%
Age	10-19 yrs	0.00%	100.00%
	20-29 yrs	10.87%	89.13%
	30-39 yrs	35.71%	64.29%
	40-49 yrs	0.00%	100.00%
	50+ yrs	15.38%	84.62%
Qualifying Coefficient (QC)	Up to 5 QC	10.31%	89.69%
	Above 5 QC	14.81%	85.19%
How long have you been playing bridge?	Since 2024	27.27%	72.73%
	Since 2020	4.17%	95.83%
	Since 2016	9.09%	90.91%
	Before 2016	12.50%	87.50%
Total		14 (11.29%)	110 (88.71%)

Source: Own elaboration.

Table 8 reveals a markedly high overall propensity to play bridge online among Polish players: 88.71% of the 124 respondents reported playing online, while only 11.29% ($n = 14$) did not. This result substantially confirms the findings reported by AARP (2022) and Nethery & Punch (2023), who documented a surge in online bridge activity during and after the COVID-19 pandemic.

A gender-disaggregated view shows minor but noteworthy variation. Female respondents demonstrated a slightly higher propensity to play online (90.32%) than their male counterparts (88.04%), suggesting that online platforms reduce gender-related participation barriers, possibly by eliminating the need for physical attendance at bridge clubs. The single respondent identifying as 'other' reported online play, though the negligible sample size precludes generalisation.

The age-group breakdown produces the most analytically compelling pattern. Two cohorts – players aged 10-19 and 40-49 – recorded a 100% propensity to play online, indicating universal adoption within these segments. The youngest cohort's result is consistent with broader evidence that Generation Z treats digital platforms as the default social environment (Newzoo, 2025). The 40-49 age group's complete adoption may reflect a pragmatic orientation: these are professionally active adults who benefit most from the flexibility and time-efficiency of online play. Conversely, the 30-39 age group displayed the lowest propensity (64.29%), a result that diverges sharply from the trend and invites further qualitative investigation. One plausible explanation is that this cohort, while digitally literate, faces the heaviest combination of professional and family obligations, limiting discretionary time for both online and offline bridge. The 50+ group reached 84.62%.

Analysing propensity by the Qualifying Coefficient (QC) – a numerical indicator of competitive ranking – reveals that players with lower competitive standing ($QC \leq 5$) exhibit a slightly higher propensity to play online (89.69%) compared to advanced players ($QC > 5$, 85.19%). This may reflect that recreational and club-level players exploit online platforms primarily as an accessible training resource, whereas elite players might have reservations about the full competitive equivalence of online formats.

The most striking result in terms of when respondents began playing concerns the 2020 cohort – those who started during the pandemic: 95.83% of them play online. This is the highest sub-group propensity in the entire table and strongly suggests that the pandemic not only accelerated digital adoption but permanently shaped the habits of a generation of bridge players who were initiated in the online environment from the outset. Players who started most recently (since 2024) showed the lowest overall propensity within the experience-based breakdown (72.73%), possibly because they are still in an early exploratory phase or have not yet fully integrated online play into their routine.

Table 9.

Perceived importance of bridge game aspects among players (Likert scale 1-7)

Feature	Category	Social	Entertainment	Competition	Personal Development
Gender	Female	5.03	4.94	4.52	6.00
	Male	4.77	4.60	5.27	4.55
Age	10-19 yrs	4.33	5.04	4.92	5.42
	20-29 yrs	4.72	4.70	4.63	4.67
	30-39 yrs	5.64	4.71	5.07	4.71
	40-49 yrs	5.07	4.64	5.57	5.21
	50+ yrs	4.81	4.23	5.69	4.81

Cont. table 9.

QC	Up to 5 QC	4.87	4.74	4.89	5.06
	Above 5 QC	4.59	4.37	5.70	4.37
How long have you been playing bridge?	Since 2024	5.00	5.09	5.09	5.27
	Since 2020	4.54	5.17	4.62	5.29
	Since 2016	4.82	4.21	4.76	4.97
	Before 2016	4.88	4.62	5.43	4.64
Total		4.81	4.66	5.06	4.91

Note. Responses recorded on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). Q refers to the four aspects: Social (A1), Entertainment (A2), Competition (A3), and Personal Development (A4). Source: Own elaboration.

Table 9 addresses the central question of whether the sporting identity of bridge has been preserved in the transition to the online environment. Respondents rated four aspects of bridge on a 7-point Likert scale. The aggregate results reveal a clear hierarchy: Competition ($M = 5.06$) and Personal Development ($M = 4.91$) rank above Social interaction ($M = 4.81$) and Entertainment ($M = 4.66$). This ordering is theoretically significant: it suggests that Polish bridge players primarily identify with the competitive and developmental dimensions of the game, aligning with the classification of bridge as a sport by the World Bridge Federation (WBF) and the International Olympic Committee (IOC).

Gender differences produce one of the most striking findings in the entire dataset. Female players rated Personal Development at a mean of 6.00 – the highest single value recorded in the table across any sub-group and dimension – while valuing Competition markedly lower (4.52). Male respondents displayed the inverse pattern, rating Competition highest (5.27) and Personal Development (4.55) below the overall mean. These differences suggest that the motivational profile of bridge is distinctly gendered: women approach online bridge as a primary vehicle for self-improvement and cognitive development, while men are more strongly driven by competitive outcomes. This finding resonates with the broader gaming motivation literature, where Przybylski, Rigby, and Ryan (2010) documented stronger achievement orientation among male players in competitive online environments.

Age-based variation further enriches the picture. The 30-39 age group assigned the highest rating to the Social dimension (5.64), suggesting that for mid-career adults, bridge serves an important community and networking function. In contrast, the 50+ cohort rated Competition highest (5.69) – a remarkable result that challenges stereotypical assumptions about older players' motivations being primarily social or cognitive. This finding suggests that competitive drive in bridge does not diminish with age; if anything, it intensifies. The youngest group (10-19) placed greatest emphasis on Personal Development (5.42), reflecting the formative, learning-oriented phase of their bridge careers.

The Qualifying Coefficient dimension reinforces the competitive framing: advanced players ($QC > 5$) rated Competition at 5.70 – notably higher than players with $QC \leq 5$ (4.89) – and Entertainment (4.37) and Personal Development (4.37) notably lower. For elite players, online bridge is unambiguously competitive in character. Michelini et al. (2023) confirmed cross-culturally that the achievement motive is the strongest predictor of intense gaming engagement, a finding directly supported by these results.

The experience-based breakdown reveals a temporal dimension in motivational structure. Players who began before 2016 assign the highest weight to Competition (5.43), consistent with long-standing immersion in the sport's competitive culture. Players who entered during the pandemic (since 2020) rate Personal Development highest (5.29), suggesting that for pandemic-era players, online bridge was discovered as a tool for cognitive growth and skill-building rather than purely for competitive purposes. Taken together, the data confirm that the core sporting identity of bridge – anchored in competition and personal development – has been preserved in the online environment, satisfying the first research question.

Table 10.

Effectiveness of online bridge as a training tool (Likert scale 1-7)

Feature	Category	Q1	Q2	Q3
Gender	Female	4.96	2.93	5.57
	Male	4.79	3.22	5.59
Age	10-19 yrs	4.71	3.04	5.08
	20-29 yrs	4.71	2.80	5.68
	30-39 yrs	5.11	2.56	5.56
	40-49 yrs	4.79	4.36	5.71
	50+ yrs	5.05	3.50	5.77
QC	Up to 5 QC	4.85	3.29	5.48
	Above 5 QC	4.70	2.74	5.87
How long?	Since 2024	5.62	3.62	5.38
	Since 2020	4.65	2.74	5.39
	Since 2016	4.90	2.63	5.47
	Before 2016	4.71	3.63	5.73
Total		4.83	3.15	5.58

Note. Q1: 'In your opinion, does playing bridge online improve your sports results?'; Q2: 'In your opinion, does playing bridge online allow you to develop your bridge skills faster than traditional play?'; Q3: 'In your opinion, are online bridge platforms an effective training tool?'. Responses on a 7-point Likert scale. Source: Own elaboration.

Table 10 examines the perceived training utility of online bridge platforms through three items. The aggregate results reveal a consistent and theoretically coherent pattern: online platforms are widely recognised as effective training tools (Q3: $M = 5.58$), are perceived to

improve sporting results (Q1: $M = 4.83$), but are not seen as categorically superior to traditional play in terms of the speed of skill development (Q2: $M = 3.15$).

The high Q3 mean (5.58) indicates broad consensus on the practical training value of online platforms. This result is consistent across gender (Female: 5.57; Male: 5.59) and across all age cohorts. The near-identical Q3 ratings across genders suggest that the training utility of online bridge is perceived as gender-neutral, offering equitable developmental value to all players. Notably, advanced players ($QC > 5$) assign the highest Q3 score of any sub-group (5.87), indicating that elite competitors are the most convinced of the efficacy of online platforms as training environments. This finding has a clear practical implication: online bridge is not a compromise medium but a high-quality training tool endorsed most strongly by those with the greatest competitive experience.

The Q1 results ($M = 4.83$) confirm a moderate-to-strong consensus that online play improves sports performance. The newest players (since 2024) rate Q1 highest (5.62), possibly because, having learned the game primarily in digital environments, they associate online play most directly with competitive improvement. The 40–49 age group registers the highest Q2 score (4.36), markedly above the overall mean of 3.15 and the only sub-group to approach a neutral-to-positive rating on this item. This anomaly may reflect that middle-aged players – combining higher time constraints with sufficient digital fluency – derive relatively greater efficiency gains from online play compared to the time investment required by traditional club-based formats.

The low overall Q2 mean (3.15) is the most nuanced finding in the table and warrants careful interpretation. A mean close to the midpoint of the Likert scale (4.0) indicates that the sample does not broadly endorse the view that online play accelerates skill development compared to traditional play. Advanced players ($QC > 5$) record the lowest Q2 score (2.74), suggesting that elite players actively resist the notion that online environments offer a developmental shortcut. This is consistent with the importance they assign to the competitive dimension (Table 9): for expert bridge players, the deliberative, face-to-face dynamics of traditional play likely remain the gold standard for developing the highest-order strategic and psychological skills of the game.

Overall, Table 10 answers the third research question affirmatively with qualification: online bridge does enable fair competition and skill development, and its platforms are broadly endorsed as effective training tools. However, the digital environment is not perceived as a wholesale replacement for traditional play in terms of developmental speed, particularly among experienced and advanced players.

5. Conclusions and Discussion

The present study set out to assess the propensity of Polish bridge players to engage in online play and to examine whether the online transition has preserved the core identity, motivations, and developmental utility of the game. Drawing on a survey of 124 Polish bridge players and grounded in a systematic review of over 80 scientific publications from the Scopus database, the findings converge on three principal conclusions that respond to the research questions and extend the theoretical framework established in the literature review.

First, the propensity to play bridge online in Poland is high and broadly distributed. An overall adoption rate of 88.71% considerably exceeds baseline expectations for digital uptake in traditional games and confirms Poland's positioning as an active participant in the global digitalisation of leisure (Statista, 2025; PZBS, 2023). The pandemic cohort's near-universal adoption (95.83%) validates characterisation of COVID-19 as a 'digital renaissance' for bridge and suggests that the attitudinal and behavioural shifts induced by the pandemic are durable rather than ephemeral. The heterogeneity of propensity across age groups – most notably the unexpectedly low rate among 30-39-year-olds – indicates that structural life-course factors (professional and family obligations) remain a meaningful constraint on digital participation that platform designers and the Polish Bridge Federation (PZBS) should consider when designing outreach initiatives.

Second, the sporting identity of bridge has been preserved in the online environment. The primacy of the Competition ($M = 5.06$) and Personal Development ($M = 4.91$) dimensions over Social interaction ($M = 4.81$) and Entertainment ($M = 4.66$) is a theoretically robust finding. It confirms that Yee's (2006) Achievement component of his three-part motivational taxonomy – the most cited framework in the online gaming motivation literature – is the dominant motivational axis for Polish bridge players, irrespective of their age, gender, or competitive level. This result is particularly noteworthy given that the broader online gaming literature frequently identifies social motives as the strongest predictor of regular engagement (Kuss, Griffiths, 2012; Savolainen et al., 2022). Bridge, as a sport, appears to constitute an exception to this pattern: its players are primarily achievement-oriented, and this orientation survives the transition to digital platforms intact. The cross-cultural invariance of the achievement motive documented by Michelini et al. (2023) across seven countries provides additional external validity to this conclusion.

Third, online bridge platforms are recognised as effective training tools, albeit not as categorical substitutes for traditional play. The high Q3 mean ($M = 5.58$) endorsing online platforms as effective training environments – strongest among elite players ($QC > 5$: $M = 5.87$) – provides empirical support for the practical integration of digital play into formal bridge training programmes. This finding is consistent with the cognitive training literature reviewed in Section 2: Verghese et al. (2003) and Aichele et al. (2016) identified regular card game

engagement as associated with reduced dementia risk, and the present results suggest that the developmental benefits of the game are perceived as transferable to the online context. The qualified neutrality on Q2 ($M = 3.15$), however, counsels against overstating the case: online platforms supplement and enrich traditional practice; they do not supplant it, at least in the perception of the most experienced players.

Taken together, these findings make a twofold contribution to the literature. Theoretically, they extend Yee's (2006) motivational taxonomy to the specific context of competitive card games, demonstrating the dominance of the achievement motive in a population not previously examined in the gaming motivation literature at this scale. Empirically, they provide the first survey-based evidence on the online propensity and motivational profile of Polish bridge players, complementing the demographic and platform-level data available from PZBS (2023) and BBO (2023) with attitudinal and perceptual insight.

Several limitations of the study must be acknowledged. The sample was recruited through a purposive snowball method via bridge clubs in Poznań, Warsaw, and Kraków, and from participants of the Junior Polish Championships, which introduces a degree of selection bias toward more active and institutionally affiliated players. The underrepresentation of players from smaller cities and recreational players without formal club affiliation limits the generalisability of the results to the full population of Polish bridge players. Furthermore, the cross-sectional design does not permit causal inference: it is not possible to determine from these data whether online play shapes motivational profiles or whether pre-existing motivational profiles predict the degree of online engagement.

Future research should address these limitations through: (1) a larger, more geographically and institutionally representative sample; (2) a longitudinal design tracking motivational change across the online–offline continuum over time; (3) qualitative methods to investigate the anomalous low propensity among the 30–39 age cohort; and (4) cross-national comparative studies, enabled by the international reach of platforms such as Bridge Base Online (BBO), to test whether the achievement-dominant motivational profile of Polish bridge players is culturally specific or reflects a universal feature of competitive bridge culture.

In conclusion, the evidence presented in this study supports the assertion that bridge has made a successful and identity-preserving transition to the online environment. The game retains its character as a competitive intellectual sport, its digital platforms are perceived as genuinely useful training tools, and its players – across age groups, genders, and competitive levels – engage with online bridge for fundamentally the same reasons they engage with the traditional game: to compete, to develop, and to master one of the most complex and rewarding card games ever devised.

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